

# USFS SHOSHONE PARK PICNIC AREA (PWSNO 1400072) SOURCE WATER ASSESSMENT FINAL REPORT

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## State of Idaho Department of Environmental Quality

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## SOURCE WATER ASSESSMENT FOR USFS SHOSHONE PARK PICNIC AREA

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your drinking water source is based on well construction characteristics; site specific sensitivity factors associated with the aquifer the water is drawn from; a land use inventory inside the well recharge zone; and water quality history. For transient water systems like USFS Shoshone Park Picnic Area, recharge zones were generally delineated as a 1000-foot fixed radius around the wells.

This report, *Source Water Assessment for USFS Shoshone Park Picnic Area* describes factors used to assess the well's susceptibility to contamination. The analysis relies on information from the well log; an inventory of land use, well site characteristics and potential contaminant sites identified through a Geographic Information System database search; and information from the public water system file. The ground water susceptibility analysis worksheet for USFS Shoshone Park Picnic Area is attached.

Taken into account with local knowledge and concerns, this assessment should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

**Well Construction.** The USFS Shoshone Park Picnic Area well was drilled in May of 1980 and went into service in May of 1981. It was drilled to a depth of 45 feet and produces an average of 16 gallons per minute. The 6-inch steel well casing extends from 18 inches above grade to 30 feet below the surface where it terminates in hard granite and, with the exception of a minor deviation in casing thickness, the casing meets Idaho Safe Drinking Water Standards. An 18-foot deep surface seal extends into decomposed granite. The surface seal material consists of cement grout. The seal does not meet the Idaho Department of Water Resources' Well Construction Standards because the seal does not extend into the consolidated formation that begins at 25 feet below the surface. Water was encountered in the first 18 feet of depth that consists of clay, gravel and boulders. Water was not present in the middle 7 feet of decomposed granite, but it did exist in the next 20 feet of hard granite. The static water level is 4 feet below ground. The system consists of a well, submersible pump, a captive air tank, 9 picnic area hydrants, a caretaker's cabin and a small irrigation system.

**Well #2.** A second well was drilled on November 10, 1993. The September 6, 2001 Sanitary Survey Report asked, "When was this well drilled and for what purpose?" The August 1991 Sanitary Survey Report noted that the caretaker's cabin was having a problem with its water pipes freezing as they cross the bridge from the well. The system may have added this second well to supply the cabin. The well log indicates that the proposed use for the well is residential. It is currently unclear whether or not this well is used as a source of water for the 2 hydrants that are also located on the south side of the river and/or a backup for the primary system.

There are no testing records for well #2. The well log identifies the depth of the well to be 120 feet and it produces an average of 6 gpm. The 6-inch steel well casing extends from 18 inches above grade to 18.5 feet below the surface where it terminates in medium granite. The casing also uses a 4-inch schedule 80 PVC liner that ends 120 feet below the surface in hard granite. With the exception of a minor deviation in the steel casing thickness, the casing meets Idaho Safe Drinking Water Standards. An 18-foot deep surface seal extends into medium granite. The surface seal material consists of 200-lbs of bentonite. The seal meets the Idaho Department of Water Resources' Well Construction Standards. The static water level is 30 feet below the surface. It is unclear whether or not well #2 is outside the flood plain.

**Well Site Characteristics.** USFS Shoshone Park Picnic Area is a large day-use site complete with many picnic sites on both sides of the river that can be accessed by footbridges. The park serves an average of 80 people per day over a 200-day period from spring to fall. It also includes a baseball diamond, a wading pond and a small caretaker's cabin. It is located along the South Fork of the Coeur d'Alene River, east of Mullan. Hale Fish Hatchery is located 700' east of the wellhead. Sanitary services consist of several sealed vault toilets. There are designated parking areas with supplemental parking running alongside the road. The South Fork of the Coeur d'Alene River and the three tributaries cross the delineated recharge zone. The land on this site is flat and well #1 is about 80' from the river. The land on the southern side of the recharge zone is very steep. The road and parking are adjacent to the wellhead and the nearest vault toilet is about 75' away. Old Mullan road is 350' to the south of the wellhead. Well #1 is located outside the 100-year flood plain. The soils in the 1,000-foot radius delineated around the USFS Shoshone Park Picnic Area well are considered moderately well drained.

**Potential Contaminant Inventory.** The potential sources for contamination in the recharge zone are the picnic area, the paved road and the parking areas, the vaulted toilets, a small dairy operation to the north, the fish hatchery, the three tributaries and the river. The picnic area, the parking areas and the roads are a potential source of chemical contaminants. The river, the three tributaries and Hale Fish Hatchery are potential sources of surface water contamination. The nearest vault to the well is about 75' feet away and it could be considered a potential source of bacteriological contamination. Although in-road cattle bars are installed before the entrance to the park, the cattle are allowed access to the northern side of the recharge zone and they are a potential bacteriological and nitrate contaminant.

**Water Quality History.** Chemical testing at the USFS Shoshone Park Picnic Area well has never returned with a result that exceeded the Maximum Contaminant Level (MCL). The well has sporadically tested positive for trace amounts of Nitrates. The Nitrate levels ranged from non-detected to 0.044 mg/L and the MCL is 10.0 mg/L. Historically, this well has an excellent record of providing safe water. Positive bacteriological results at USFS Shoshone Park Picnic Area were: 1998-1. It should be noted that 1998 was a flood-year.

**Susceptibility to Contamination.** The USFS Shoshone Park Picnic Area well ranked moderately susceptible to all classes of regulated contaminants. Hydrologic sensitivity factors related to local geology added more than half of the points to the final susceptibility scores. The susceptibility analysis worksheet on page 6 of this report shows how the well was scored. Formulas used to compute the final susceptibility scores are at the bottom of the worksheet.

**Source Water Protection.** This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

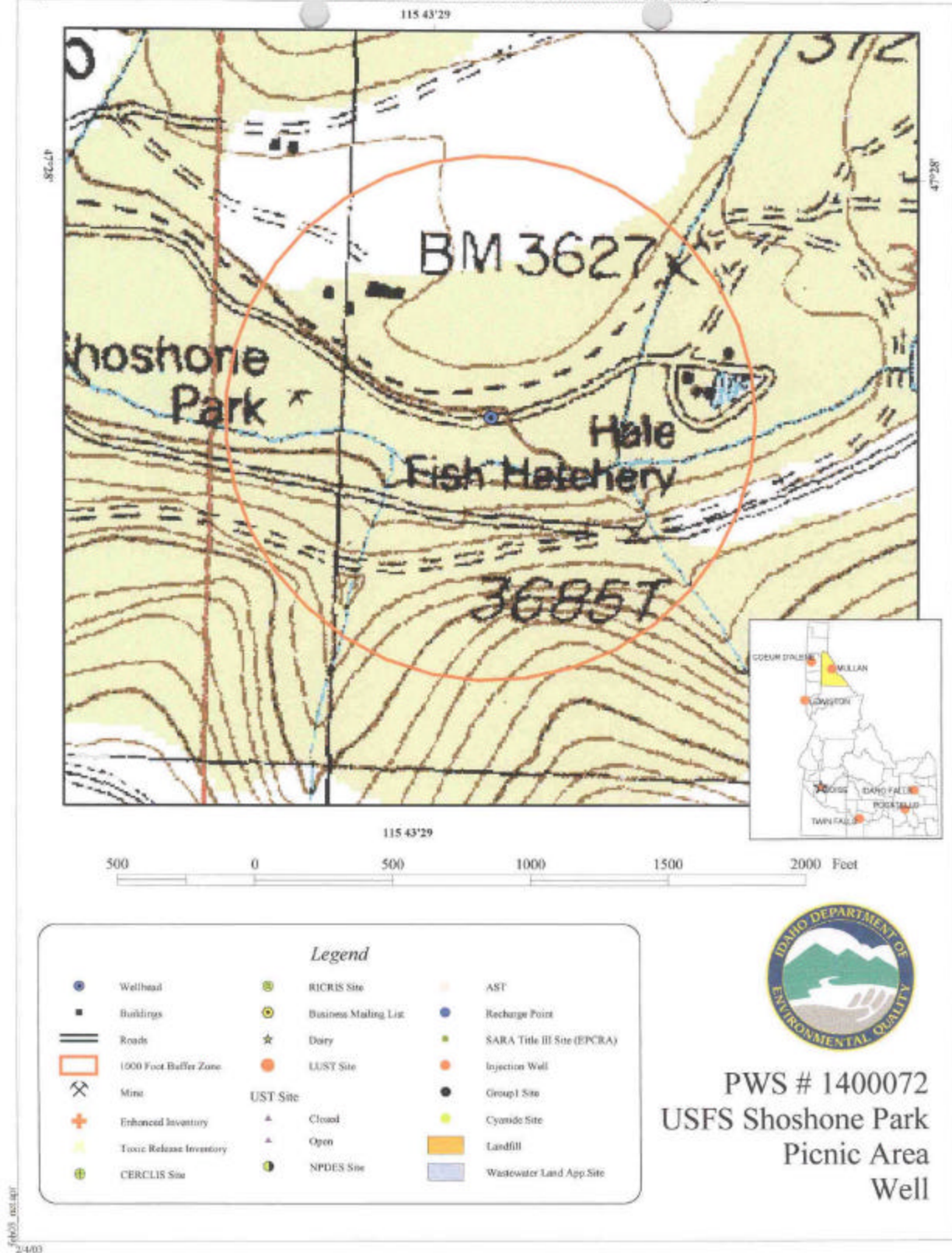
The USFS Shoshone Park Picnic Area water system was in good condition and it was in compliance with the *Idaho Rules for Public Drinking Water Systems* when it was inspected in the September 2001 Sanitary Survey. The well is tested monthly instead of the required quarterly testing during the operating system. Continuing to operate and maintain the system as it has been in the past should ensure continuation of good water quality for the campground.

IDEQ has requested a Microscopic Particulate Analysis (MPA) be performed on the system. The MPA has not yet been completed.

In September of 2001, the following deficiencies were noted. The hydrants need to be replaced, a water meter needs to be installed, nitrate-sampling needs to become current and well #2 needs to be identified as either part of the public water system, which includes maintenance and sampling, or separate from the public water system. If the well is no longer operational, then it needs to be abandoned properly. If any of the above situations have not yet been addressed, then they should be resolved as soon as possible. Protection efforts should also include signage to keep vehicles away from the well site and its recharge zone. Signage might read “Drinking Water Protection Area, Keep Vehicles, Pets & ALL Chemicals Away.”

For assistance in developing source water protection strategies please contact Dan Remmick at the Coeur d'Alene Regional DEQ office at 208 769-1422.

Figure 1. USFS Shoshone Park Picnic Area Delineation and Potential Contaminant Inventory.



## Ground Water Susceptibility

Public Water System Name : **USFS SHOSHONE PARK PICNIC AREA** Well# : **WELL #1**  
 Public Water System Number : **1400072** 2/3/03 10:41:00 AM

<b>1. System Construction</b>		<b>SCORE</b>			
Drill Date	5/29/80				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES 2001				
Well meets IDWR construction standards	YES	0			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
<b>Total System Construction Score</b>		<b>3</b>			
<b>2. Hydrologic Sensitivity</b>					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
<b>Total Hydrologic Score</b>		<b>6</b>			
		<b>IOC</b>	<b>VOC</b>	<b>SOC</b>	<b>Microbial</b>
<b>3. Potential Contaminant / Land Use</b>		<b>Score</b>	<b>Score</b>	<b>Score</b>	<b>Score</b>
Land Use	WOODLAND	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	NO	NO	NO	NO	NO
<b>Potential Contaminant Source/Land Use Score</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Potential Contaminant / Land Use - 1000-Foot Radius</b>					
Contaminant sources present (Number of Sources)	YES	1	1	1	2
(Score = # Sources X 2 ) 8 Points Maximum		2	2	2	4
Sources of Class II or III leachable contaminants or Microbials	YES	1	1	1	
4 Points Maximum		1	1	1	
1000-Foot Radius contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use 1000-Foot Radius	Less Than 25% Agricultural Land	0	0	0	0
<b>Total Potential Contaminant Source / Land Use Score - 1000-Foot Radius</b>		<b>3</b>	<b>3</b>	<b>3</b>	<b>4</b>
<b>Cumulative Potential Contaminant / Land Use Score</b>		<b>3</b>	<b>3</b>	<b>3</b>	<b>4</b>
<b>4. Final Susceptibility Source Score</b>		<b>10</b>	<b>10</b>	<b>10</b>	<b>11</b>
<b>5. Final Well Ranking</b>		<b>Moderate</b>	<b>Moderate</b>	<b>Moderate</b>	<b>Moderate</b>

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)
- 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

### Final Susceptibility Ranking:

- 0 - 5 Low Susceptibility  
 6 - 12 Moderate Susceptibility  
 > 13 High Susceptibility

## POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

**AST (Aboveground Storage Tanks)** – Sites with aboveground storage tanks.

**Business Mailing List** – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

**CERCLIS** – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

**Cyanide Site** – DEQ permitted and known historical sites/facilities using cyanide.

**Dairy** – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

**Deep Injection Well** – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

**Enhanced Inventory** – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

**Floodplain** – This is a coverage of the 100year floodplains.

**Group 1 Sites** – These are sites that show elevated levels of contaminants and are not within the priority one areas.

**Inorganic Priority Area** – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

**Landfill** – Areas of open and closed municipal and non-municipal landfills.

**LUST (Leaking Underground Storage Tank)** – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

**Mines and Quarries** – Mines and quarries permitted through the Idaho Department of Lands.)

**Nitrate Priority Area** – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

**NPDES (National Pollutant Discharge Elimination System)** – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

**Organic Priority Areas** – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

**Recharge Point** – This includes active, proposed, and possible recharge sites on the Snake River Plain.

**RICRIS** – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

**SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities)** – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

**Toxic Release Inventory (TRI)** – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

**UST (Underground Storage Tank)** – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

**Wastewater Land Applications Sites** – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

**Wellheads** – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

**NOTE:** Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.